care delivery system on the basis of their demonstrated ability to meet the needs of the people, not on the basis of one label or another."

Third, I would like to reiterate my view that in making program direction or administrative decisions on the basis of structural and process criteria, such labels as "consumer" and "provider", and epithets intended to be denigrative, like "provider dominance," are not useful. Rather *outcome* criteria must be used, prospectively in program planning, retrospectively in program evaluation. Personnel must be chosen to work in a program on the basis of their performance in advocating and then achieving stated goals and objectives—not on the basis of labels like "consumer" or "provider", or characteristics like age, sex, and ethnicity.

Hanson and Paap fail to tell us with what health care delivery system problems (outcomes) they are concerned. They fail to define "provider dominance." Which "providers" are they talking about—doctors, nurses, hospital administrators, orderlies, hospital boards of trustees, government officials, insurance company owners? They fail to define "consumer". They obviously feel that some group or groups of people have been "left out" of the health care delivery system power structure, but they fail to discuss the fact that the entire voluntary hospital system is already "consumer-controlled" through boards of trustees, if "consumer" is simply defined as "non-provider". Looking at the problems of the voluntary hospital system, one knows that "consumer control" alone is not the answer. If they have concerns about *social class* representation and control, then they should discuss them.

In the health care delivery system, as in every other system in our society, there are saints and there are sinners, but in terms of the health needs of the people, the true state of grace of any participant is determined by his or her *work*, not his or her label or color.

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REFERENCE

1. Jonas, S.: A theoretical approach to the question of community control of health service facilities. Am. J. Public Health, 61:916, 1971.

Comment on Assessing Effectiveness of Health Education

In "Structuring Policy Development for Consumer Health Education," Werlin and Schaufler combine results of 31 impact evaluation studies to assess effectiveness of health education. These studies include evaluation of health education in schools, prepaid medical plans, specific disease programs, community programs, and via the mass media. They differ in educational content, objectives, methods, and effectiveness criteria. Combining the results for an overall assessment of health education effectiveness is indeed like mixing apples, oranges, nuts, melons and other fruits together for an overall judgment of the taste of fruit.

The authors stress the need for evaluating "long-term impact of one-time or periodically reinforced, moderately funded programs." Such programs cannot be expected to have long-term impacts. Health education has usually been condemned to be short-lived, to be restricted to narrowly defined targets, and to be limited in scope and methods by the demands of their respective larger parent health programs. What we need is support of *well designed extensive educational programs* that could indeed be reasonably expected to have long-term educational impacts, instead of, as the authors recommend, more evaluation of the long-term impacts of inadequate health education projects.

The authors refer to improved health status and reduced care costs as criteria of educational effectiveness. But the task of health education is merely to induce people to adopt behaviors recommended by the medical and other health professions. If it happens (and it does) that an educational program has persuaded a target population to adopt particular behaviors believed by the medical professions, say, to reduce hypertension, but there is no significant reduction, health education still has been successful by all appropriate criteria. Thus, medical outcome and costs are *not* critical measures of health educational effectiveness.

We need to learn when, where, and under what conditions health education is and is not effective, and what methods work best for what purposes and in what setting. The authors' attempt is a welcome, but an inadequate and poorly conceptualized step. The great importance of health education to the nation's health through the spread of more healthful practices and living habits deserves more careful conceptualization and a more appropriate methodological approach in its evaluation than appears in this Public Health "Brief" which, of course, may or may not adequately reflect the full report of the study (which I have not seen).

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REFERENCE

1. Werlin SH and Schaufler HH: Structuring policy development for consumer health education. Am J Public Health 68:596-7, 1978.

Werlin's Response

Dr. Hochbaum has criticized our assessment of demonstrated health education effectiveness because we have looked at a broad spectrum of programs. If one is to equate each type of program with a different fruit, we would argue with his conclusions. Eating a good fruit salad (or sampling the results of a variety of programs) not only helps one to appreciate the distinguishing characteristics of many kinds of fruits but also permits the eater to reach an overall judgment about how fruit tastes.

We do not argue with Dr. Hochbaum's expressed need for support and evaluation of extensive health educational programs; and we agree that if short-term, moderately funded programs cannot be expected to have long-term impacts then evaluation of them makes little sense. The next logical

question is why bother to support such programs at all if long-term impact cannot be achieved?

In these times of limited resources and a concern for both cost-effectiveness in the use of health dollars and cost-containment in the escalation of health care expenditures, health education that has "succeeded" in modifying consumer behavior with no improvement in health status or reduction in the costs of care has little to offer. We see behavioral change as an interim result of health education and the means to an end necessary but not sufficient to assure "success."

The full report of the study on which the "Public Health Brief" is based makes several other recommendations, including one that speaks directly to some of the issues Dr. Hochbaum raises by recommending research into the intensity of educational intervention required to produce and *sustain* appropriate impact. The report, "A Survey of Consumer Health Education Programs," may be obtained through the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151, Publication No. PB 251775, for $7.75.

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Funding of Radiation Protection Standards Research

When I saw the item "Bad Science and Social Penalties" by Cyril L. Comer at the Electric Power Research Institute,[1] I was reminded of a problem with much of the research done today performed by "in-house researchers." This includes work supported by interest groups such as the American Tobacco Institute, the American Cereals Institute, and the U.S. Atomic Energy Commission (now the U.S. Department of Energy). Much of this reseach deals with issues of concern to those providing the funding for the research. This often raises a question of conflict of interest and possible bias of the funding agency and the principal investigator, who hopes for a renewal of his funding.

As an example of the problems posed by research sponsored by special interest groups, let me cite work done to support radiation protection standards. Most of this work has been done by or for agencies which are regulated by these standards. This problem is responsible for the present controversy over the adequacy of such standards, in my opinion.

Much of the research done in this area has been published in the *Journal of Health Physics*, the official organ for the Health Physics Society. Many members of the Society present themselves as authorities in the area of radiation effects but have a problem with conflict of interest.

As a member of that Society I am impressed with the persistently pro-nuclear position of their publications. This fox-guarding-the-henhouse situation is perhaps best summed up by Dr. Dade W. Moeller in his 1971 presidential message to the Health Physics Society,[2] in which he encouraged all of the members to "be as active as you possibly can," and "to paraphrase an old adage, let's all put our mouth where our money is." I refer readers who want to read all of this interesting message to the *Journal of Health Physics*.

This attitude seems to extend to all levels in this field. The International Commission on Radiation Protection (ICRP) admitted in 1965, "The Commission believes that this level (5 rems per generation) provides reasonable latitude for the expansion of atomic energy programs in the forseeable future. It should be emphasized that the limit may not in fact represent a proper balance between possible harm and probable benefit because of the uncertainty in assessing the risks and benefits that would justify the exposure."[3]

In my opinion, research directed towards the establishment of reasonable radiation protection standards should be funded and carried out by agencies and individuals that have as their primary mission the protection of public health.

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REFERENCES

1. Comer C: Bad Science and Social Penalties, Science 200:1225, 1978, Reproduced in Am J Public Health 68:988, 1978.
2. Moeller DW: The President's Message, Health Physics 21:1 July, 1971.
3. Recommendations of the International Commission on Radiological Protection. (Adopted Sept. 17, 1965) ICRP Publication #9, 1965 Pergamon Press, Oxford, England.